

RHOSYDD LLANPUMSAINT SITE OF SPECIAL SCIENTIFIC INTEREST



YOUR SPECIAL SITE AND ITS FUTURE

‘Your Special Site and its Future’ is part of our commitment to improve the way we work with Site of Special Scientific Interest (SSSI) owners and occupiers. In it, we explain what is special about the wildlife/geology on your site, and what care is needed to look after its wildlife/geology into the future.

All SSSIs are considered to be of national importance and we recognise the crucial role that owners and occupiers play in their management and protection. We need you to share your views and knowledge of this site with us, to help safeguard it.

We hope that you will find ‘Your Special Site and its Future’ interesting and helpful. Please contact us if there is anything about the site and its management that you would like to discuss.

What is ‘special’ about the wildlife/geology at Rhosydd Llanpumsaint?

Rhosydd Llanpumsaint has 3 special features.

- Quaternary (Ice Age) Landforms and Associated Sediments
- Fen
- Marshy Grassland

Within the area covered by the Rhosydd Llanpumsaint SSSI, there are numerous oval, crater-like dips in the land surface of up to 70m across, with marshy interiors.

The crater-like features were formed when the ground was domed-up by the formation of lens shaped ice blocks within the soil and subsequently let down again as the ice melted, leaving depressions surrounded by low ramparts. Although the central areas of the depressions may originally have been occupied by ponds, as time progressed, they were filled with peat derived from partially decayed vegetation.

Pollen from peat samples that can be obtained from these areas provides a record of how the surrounding landscape has changed since the Ice Age, starting out as tundra, and then developing naturally into deciduous woodland as the climate improved, and with subsequent conversion by humans to an agricultural landscape.

Rhosydd Llanpumsaint supports one of the best examples of a complex of ramparted ground-ice depressions (sometimes called ‘Pingo basins’) in Wales and these hold a varied range of fen communities. Fen habitats are peatlands that receive water and nutrients via inflows from the surrounding land, as well as from rainfall. This reliance on inflowing water makes them very easy to damage through nutrient enrichment and drainage. This habitat supports a large diversity of plants, such as bog bean, bottle sedge and wild cranberry.

In places, the fen vegetation has developed into bog, which supports plants such as red bog moss, deer grass and bilberry. The peat accumulation has also preserved a unique record of plant and animal remains and some atmospheric deposits. From these deposits it is possible to assess the historical patterns of vegetation and climate change, as well as human land use.

During the last century, fen, bog and mire habitat has declined dramatically in Britain, due to agricultural intensification. Fen habitats support a wide range of plants and animals, including dragonflies and other aquatic invertebrates. The small areas of bog habitat also support distinct and specialised plant assemblages. The importance of fen and bog habitats has been recognised by the UK Government and both these habitats are listed as UK Biodiversity Action Plan Habitats.

The ramparts surrounding the basins hold dry grassland, and the ramparted depressions sit in a matrix of flushes, marshy grassland and wet heath. This mixture of surrounding vegetation communities is of special interest and forms what is called ‘rhos pasture’. Across Wales, much of the rhos pasture has been lost through drainage, development and abandonment and it is now a nationally scarce habitat, as are many of the plants and animals that are associated with this habitat.

As well as the features listed above, there are many other species of interest. The liverwort 'veilwort' (*Pallavicinia lyellii*) has recently been discovered on this site. This is the only known colony in Carmarthenshire. This species is provisionally classified as vulnerable in Europe and has declined across the whole continent. Veilwort grows amongst tussocks or detritus on marshy grassland or in bogs at low altitude.

The range of plants found at Rhosydd Llanpumsaint is particularly important for a number of rare butterflies, such as the Marsh Fritillary butterfly, which is present on the site. This black and orange butterfly is now very rare across Europe.

What do we want Rhosydd Llanpumsaint to look like?

The following is a description of how we would like to see the features at Rhosydd Llanpumsaint.

So that this important site continues to support its special range of habitats and species, it is essential that the pingo complex and varied range of fen and marshy grassland are maintained.

The majority of land on the site shows the classic undulating terrain of a 'pingo' complex, with a mixture of different plant communities that creates a complex patchwork of species-rich habitats. A variety of fen and marshy grassland habitats cover most of the site and, during the summer, are at their most colourful. Within the ramparts of the pingos, the mire vegetation consists of a deep mat of green and red bog mosses, topped by sedges such as star sedge, carnation sedge and bottle sedge. Growing amongst these is a rich array of wetland plants, including bog bean, hare's tail cottongrass, cross leaved heath, bog asphodel and wild cranberry.

In other parts of the pingo areas, there is marshy grassland, which holds several scarce species, such as whorled caraway. These areas of marshy grassland are also splashed with colour thanks to flowers such as devil's-bit scabious, marsh bedstraw, greater bird's-foot-trefoil and marsh willowherb. To the east of the site there is a discrete block of bog. (The bog was extensively cut for peat in the 19th century and this area is now becoming re-vegetated and holds further fen vegetation of scientific interest).

The combination of the wide variety of different fen and marshy grassland types together makes Rhosydd Llanpumsaint a special place, especially in the setting of a pingo landscape.

What management is needed on Rhosydd Llanpumsaint SSSI and why?

Although Rhosydd Llanpumsaint is an excellent place for wildlife and geology, it will only remain so if the necessary management continues. The condition of the habitats present on the site results from the 'traditional' management that has continued over many decades, or even centuries. This management would have consisted of cattle grazing, with only light use of organic fertilizers on drier ground. It will be essential to continue appropriate management, and our priority is to work with you to achieve this. We place a great importance on our relationships with owners and occupiers, because without your help it will be impossible for us to safeguard the special features on your land.

What does this mean in practice?

Various factors could damage the special features at Rhosydd Llanpumsaint if they are not properly managed. These are the ones we regard as most important:

Modification of Landforms

The landforms and associated deposits have mostly survived many years of agricultural use but it is important that no damage occurs due to changes in land-use and or developments of any kind. The visibility of the landforms can be maintained by appropriate grazing (see below) and, to fulfill one of the functions for which the geomorphological feature is notified, scientists should be allowed access as long as this has been agreed between the landowner and CCW. It is likely that only occasional requests will be made to visit the site for research/study.

Drainage

The fen and mire communities are dependent on the natural water table being maintained, together with natural pathways of surface and ground-water movement. To preserve these important features, it is essential that no artificial drainage work is carried out. CCW would also be concerned about new drainage systems on adjacent fields that may interrupt the natural hydrology of the special site, especially if they caused inflows of nutrient rich water. Inappropriate drainage could also damage the important peat sequences contained within the pingo ramparts.

Grazing

To maintain the interest of the grassland and mire it is important that the site is grazed. Grazing maintains the sward in an open condition and prevents the purple moor grass and rushes from becoming too widespread and shading other plants. It prevents the build up of leaf litter which would also contribute to reducing the light and space needed for other plants to grow. Absence of grazing can also increase the risk of encroachment from scrub species such as gorse, willow and alder, resulting in decline of the grassland features for which the site is of special interest. Care should also be taken to avoid over-grazing, as heavily disturbed, poached areas would be detrimental to the vegetation communities and to the geological interests.

The preferred grazing stock for the areas of rhos pasture and mire are cattle or horses. They are more tolerant of the wet conditions found on rhos pasture. They are less selective in their grazing habits than sheep and are ideal for removing long or rank vegetation. Sheep can graze the areas of the site that only have the geological features present, but they would not be desirable as the sole grazing animal in the rhos pasture and mire. Sheep are more selective in their feeding and tend to graze out smaller flowering plants, ignoring the tougher grasses. Sheep-grazed pastures often do not contain devil's-bit scabious, which is important as the marsh fritillary butterfly's food plant, nor many other interesting flowers.

Extensive grazing in the spring and summer would be ideal for the rhos pasture areas, with stocking rates of no more than 1 cow or horse per hectare. Ideally this should lead to a mosaic of vegetation structures, with patches of both tall and short vegetation.

The use of modern fertilizers and other chemicals would be very harmful to the rhos pasture, fen and bog. This is because they stimulate the growth of one or two grass species at the

expense of the many different plants that we are trying to encourage, which are vulnerable to high levels of phosphorous and nitrogen. Eventually, it can cause these grasses to outcompete the many species of wildflower.

Scrub

The spread of scrub may be indicative of insufficient grazing and will result in a loss in the extent and species diversity of the habitats. Grazing at stocking levels described above will reduce scrub development, but not prevent it completely. Scrub must be controlled and kept back to the field boundaries and away from the geological interests. Physically removing the scrub in some areas may be necessary in the future. The use of burning to control scrub is discouraged, as it may damage the insect populations.

Finally

Our knowledge and understanding of wildlife/geology is continually improving. It is possible that new issues may arise in the future, whilst other issues may disappear. This statement is written with the best information we have now, but may have to change in the future as our understanding improves, in particular, of the possible/probable impact of climate change. Any information you can provide on the wildlife of your site, its management and its conservation would be much appreciated.

If you would like to discuss any aspect of your SSSI, or have any concerns about your SSSI, please contact your local CCW office.

**Your local office is;
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